CLAIMS

1. A radiation imaging device comprising:

a geometric transformation parameter solving
unit adapted to acquire, from among plural
5   projected images of which projected angles of a
radiation are different from others, geometric
transformation parameters between at least the two
projected images of which the projected angles of
the radiation overlap each other;

10   a changing unit adapted to gradually change
the geometric transformation parameters acquired by
said geometric transformation parameter solving
unit, within a predetermined range of the projected
angles of the radiation; and

15   a body movement correction unit adapted to
execute a correction of a body movement by
executing geometric transformation to the plural
projected images of which the projected angles of
the radiation are different, by using the
20   respective geometric transformation parameters
changed by said changing unit.

2. A radiation imaging device according to
Claim 1, further comprising an estimation unit
adapted to estimate magnitude of the body movement
25   by using the geometric transformation parameter
acquired by said geometric transformation parameter
solving unit,

wherein said body movement correction unit executes the correction of the body movement in a case where it is judged by said estimation unit that the magnitude of the body movement is equal to or larger than predetermined magnitude.

3. A radiation imaging device according to Claim 2, further comprising a tomographic image creation unit adapted to

create, in the case where it is judged by said estimation unit that the magnitude of the body movement is equal to or larger than the predetermined magnitude, a tomographic image by reconstructing the projected images of which the correction of the body movement has been executed by said body movement correction unit, and

create, in a case where it is judged by said estimation unit that the magnitude of the body movement is smaller than the predetermined magnitude, the tomographic image by using the projected images of which the correction of the body movement is not executed by said body movement correction unit.

4. A radiation imaging device according to Claim 1, wherein

said geometric transformation parameter solving unit acquires coordinates of corresponding points on at least the two projected images of

which the projected angles of the radiation overlap

each other, and acquires, by using the acquired

coordinates of the corresponding points, the

geometric transformation parameters between at

5   least the two projected images of which the

projected angles of the radiation overlap each

other, and

        said body movement correction unit gradually

changes, within the predetermined range of the

10   projected angles of the radiation, the geometric

transformation parameters acquired by said

geometric transformation parameter solving unit,

determines the changed geometric transformation

parameters as geometric transformation parameters

15   of geometric correction, and executes the geometric

transformation to the projected images of which the

projected angles of the radiation are within the

predetermined range by using the determined

geometric transformation parameters of the

20   geometric correction.

        5. A radiation imaging device according to

Claim 1, wherein said geometric transformation

parameter solving unit acquires the geometric

transformation parameters between at least the two

25   projected images of which the projected angles of

the radiation overlap each other, by using any one

of affine transformation, Helmert transformation,

secondary projective transformation and high-order
polynomial transformation.

6. A radiation imaging device according to
Claim 4, wherein said geometric transformation
5   parameter solving unit acquires the coordinates of
the corresponding points on at least the two
projected images of which the projected angles of
the radiation overlap each other, by using a
matching method.

10   7. An image processing method comprising:
a geometric transformation parameter solving
step of acquiring, from among plural projected
images of which projected angles of a radiation are
different from others, geometric transformation
15   parameters between at least the two projected
images of which the projected angles of the
radiation overlap each other;
a changing step of gradually changing the
geometric transformation parameters acquired in
20   said geometric transformation parameter solving
step, within a predetermined range of the projected
angles of the radiation; and
a body movement correction step of executing a
correction of a body movement by executing
25   geometric transformation to the plural projected
images of which the projected angles of the
radiation are different, by using the respective

changed geometric transformation parameters.

8. An image processing method according to Claim 7, further comprising an estimation step of estimating magnitude of the body movement by using the geometric transformation parameter acquired in said geometric transformation parameter solving step,

wherein said body movement correction step is adapted to execute the correction of the body movement in a case where it is judged in said estimation step that the magnitude of the body movement is equal to or larger than predetermined magnitude.

9. An image processing method according to Claim 8, further comprising a tomographic image creation step of

creating, in the case where it is judged in said estimation step that the magnitude of the body movement is equal to or larger than the predetermined magnitude, a tomographic image by reconstructing the projected images of which the correction of the body movement has been executed in said body movement correction step, and

creating, in a case where it is judged in said estimation step that the magnitude of the body movement is smaller than the predetermined magnitude, the tomographic image by using the

projected images of which the correction of the
body movement is not executed in said body movement
correction step.

10. An image processing method according to
5   Claim 7, wherein

said geometric transformation parameter
solving step is adapted to acquire coordinates of
corresponding points on at least the two projected
images of which the projected angles of the
10   radiation overlap each other, and acquire, by using
the acquired coordinates of the corresponding
points, the geometric transformation parameters
between at least the two projected images of which
the projected angles of the radiation overlap each
15   other, and

said body movement correction step is adapted
to gradually change, within the predetermined range
of the projected angles of the radiation, the
geometric transformation parameters acquired in
20   said geometric transformation parameter solving
step, determine the changed geometric
transformation parameters as geometric
transformation parameters of geometric correction,
and execute the geometric transformation to the
25   projected images of which the projected angles of
the radiation are within the predetermined range by
using the determined geometric transformation

parameters of the geometric correction.

11. An image processing method according to
Claim 7, wherein said geometric transformation
parameter solving step is adapted to acquire the
geometric transformation parameters between at
least the two projected images of which the
projected angles of the radiation overlap each
other, by using any one of affine transformation,
Helmert transformation, secondary projective
transformation and high-order polynomial
transformation.

12. An image processing method according to
Claim 10, wherein said geometric transformation
parameter solving step is adapted to acquire the
coordinates of the corresponding points on at least
the two projected images of which the projected
angles of the radiation overlap each other, by
using a matching method.

13. A computer program for causing a computer
to execute:

a geometric transformation parameter solving
step of acquiring, from among plural projected
images of which projected angles of a radiation are
different from others, geometric transformation
parameters between at least the two projected
images of which the projected angles of the
radiation overlap each other;

a changing step of gradually changing the geometric transformation parameters acquired in said geometric transformation parameter solving step, within a predetermined range of the projected angles of the radiation; and

a body movement correction step of executing a correction of a body movement by executing geometric transformation to the plural projected images of which the projected angles of the radiation are different, by using the respective changed geometric transformation parameters.